AD-A103 685 ARMY ELECTRONICS RESEARCH AND DEVELOPMENT COMMAND WS--ETC F/G 13/1?
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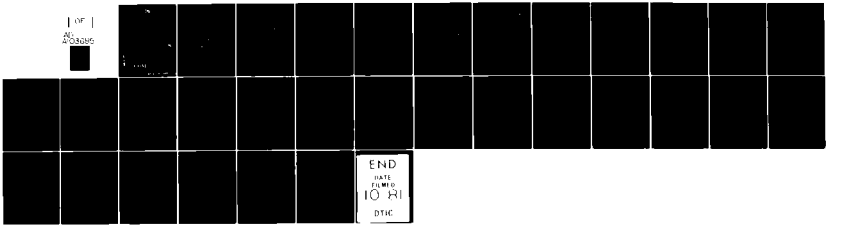

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DR 1196
July 1981
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AD A103685

METEOROLOGICAL DATA REPORT

19305B MLRS
Missile Numbers V01-023, V02-008
Round Numbers V-170/PW-1, V-171/MD-35
20 July 1981

by

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Program Support Coordinator
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ATMOSPHERIC SCIENCES LABORATORY
WHITE SANDS MISSILE RANGE, NEW MEXICO

ECOM
UNITED STATES ARMY ELECTRONICS COMMAND

81 9 02 009

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20. ABSTRACT (Continue on reverse side if necessary and identify by block number)

Meteorological data gathered for the launching of the 19305B MLRS, Missile Numbers V01-023, V02-008, Round Numbers V-170/PW-1, V-171/MD-35 presented in tabular form.

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INTRODUCTION

19305B MLRS, Missile Numbers V01-023 and V02-008, Round Numbers V-170/PW-1 and V-171/MD-35, were launched from LC-33, White Sands Missile Range (WSMR), New Mexico, at 0939 and 0939:05 MDT, 20 July 1981. The scheduled launch times were 0930 and 0930:04.5 MDT.

DISCUSSION

Meteorological data were recorded and reduced by the White Sands Meteorological Team, Atmospheric Sciences Laboratory (ASL), White Sands Missile Range, New Mexico. The data were obtained by the following methods:

1. Observations:

a. Surface

(1) Standard surface observations to include pressure, temperature (°C), relative humidity, dew point (°C), density (gm/m^3), wind speed and direction, and cloud cover were made at the LC-33 Met Site at T-0 minutes.

(2) Anemometer data were provided from existing pole-mounted and tower-mounted anemometers at LC-33. Monitor of wind speed and direction from one anemometer was also provided in the launch control room.

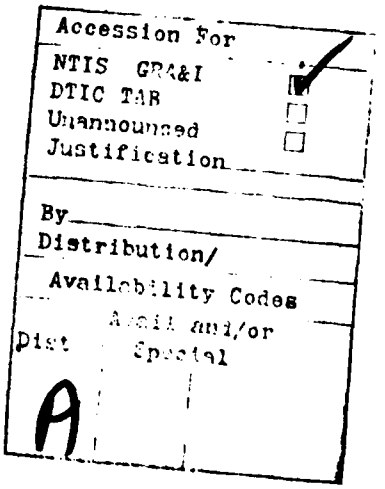
b. Upper Air:

(1) Low level wind data were obtained from RAPTS T-9 pibal observations at:

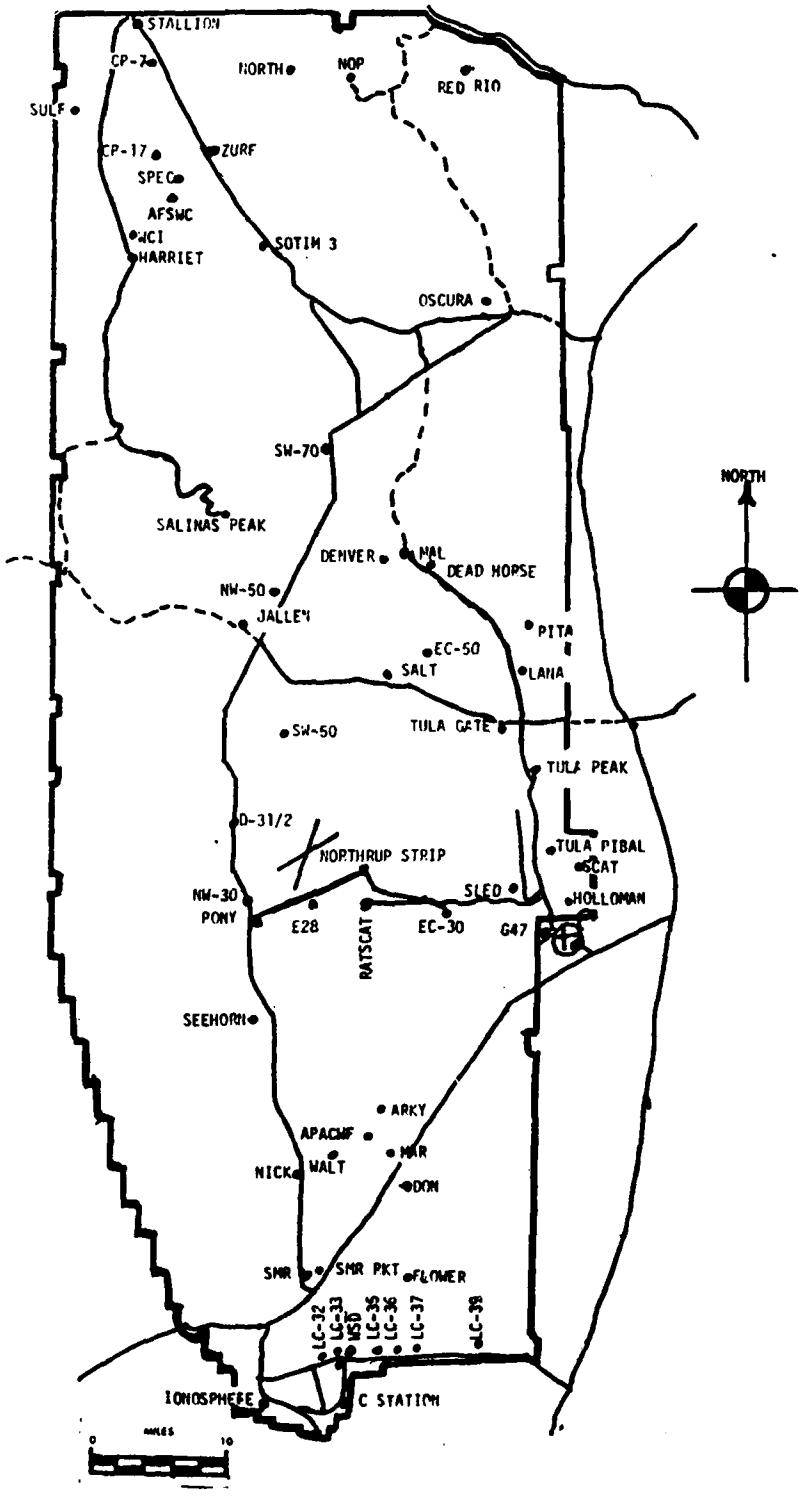
SITE AND ALTITUDE	
LC-33	2000 Meters
NICK	1750 Meters

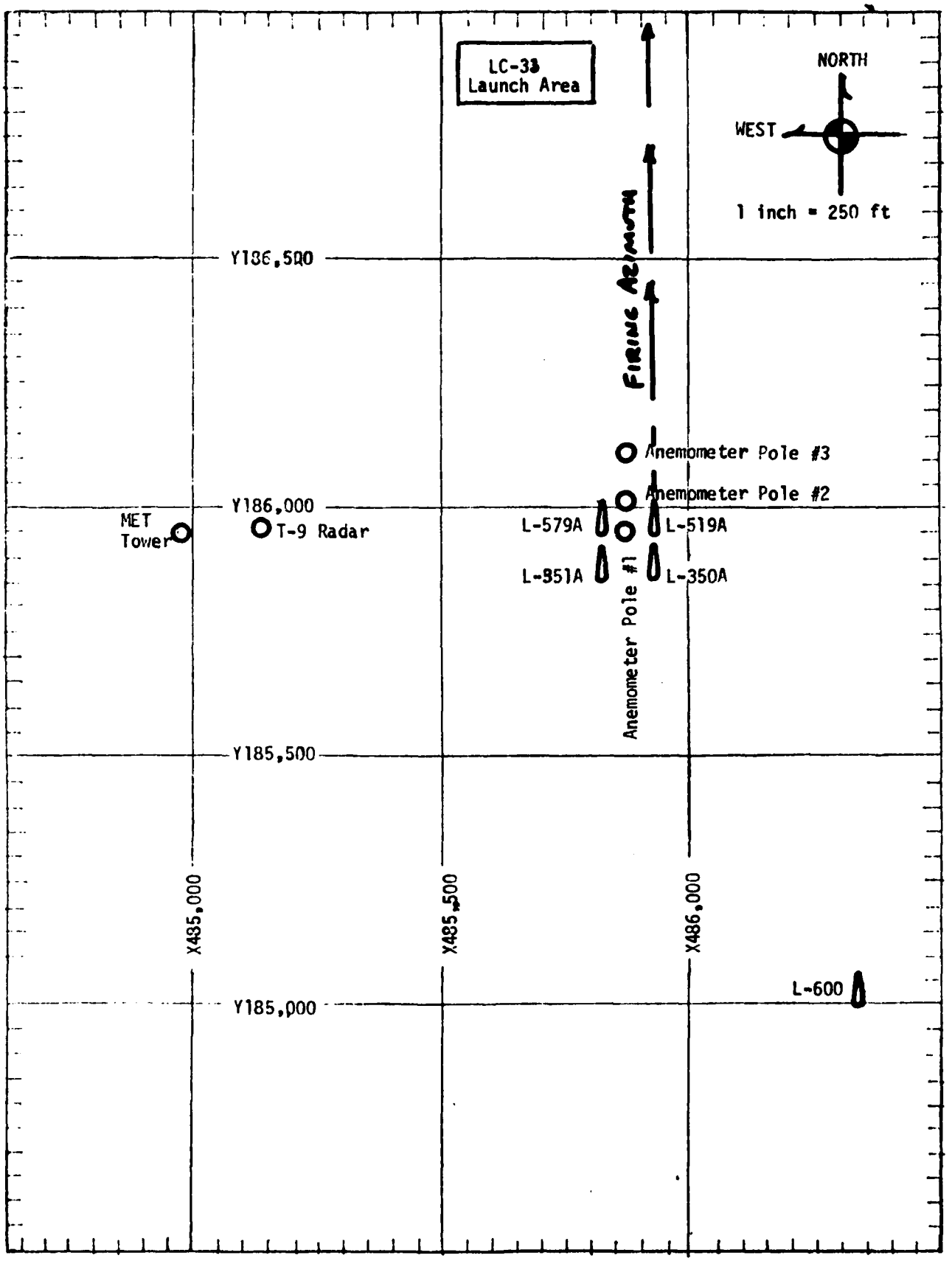
(2) Air structure data (rawinsonde) were collected at the following Met Sites:

SITE AND TIME	
WSD	0630 MDT
LC-37	0730 MDT
WSD	0830 MDT
LC-37	0930 MDT
WSD	1030 MDT



WSMR METEOROLOGICAL SITES




LC-38
Launch Area
NORTH
WEST
1 inch = 250 ft
FIRING AZIMUTH
Y186,500
Anemometer Pole #3
Anemometer Pole #2
Y186,000
MET
Tower
T-9 Radar
L-579A
L-519A
L-351A
L-350A
Anemometer Pole #1
Y185,500
X485,000
X485,500
X486,000
L-600
Y185,000

PROJECT SURFACE OBSERVATION

TABLE 1 STATION LC-33

DATE 20 (DAY) July (MONTH) 1981 (YEAR) X= 484,982.64 Y= 185,957.73 H= 3983.0

TIME M D J	PRESSURE mbs	TEMPERATURE °F	TEMPERATURE °C	DEW POINT °F	DEW POINT °C	RELATIVE HUMIDITY %	DENSITY gm/m³	WIND DIRECTION degs Tn	WIND SPEED kts	WIND CHARACTER kts	VISIBILITY
0939	882.7		31.0		16.5	41	1000	078	03		50+

OBSTRUCTIONS TO VISIBILITY	CLOUDS 1st LAYER AMT	1st LAYER TYPE	1st LAYER HGT	2nd LAYER AMT	2nd LAYER TYPE	2nd LAYER HGT	3rd LAYER AMT	3rd LAYER TYPE	3rd LAYER HGT	REMARKS
NONE	6	CI	25000							

PSYCHROMETRIC COMPUTATION

TIME: MDT	0939		
DRY BULB TEMP.	31.0		
WET BULB TEMP.	20.8		
WET BULB DEPR.	10.2		
DEW POINT	16.5		
RELATIVE HUMID.	41%		

TABLE 2 LC-33 FIXED POLE ANEMOMETER MEASURED WINDS

0939 MDT
20 July 1981

POLE #1 X485,874.29 Y185,958.90 H4018.74 38.7 ft. AGL			POLE #2 X485,874.93 Y186,012.00 H4033.57 53.0 ft. AGL			POLE #3 X485,877.29 Y186,116.06 H4063.92 83.6 ft. AGL		
T-TIME SEC	DIR DEG	SPEED KTS	T-TIME SEC	DIR DEG	SPEED KTS	T-TIME SEC	DIR DEG	SPEED KTS
T-30	064	02	T-30	080	01	T-30	093	02
T-20	MISG	03	T-20	C A L M		T-20	107	03
T-10	087	03	T-10	096	02	T-10	119	04
$T_{0.0}$	083	03	$T_{0.0}$	100	03	$T_{0.0}$	108	04
T+10	079	03	T+10	068	02	T+10	043	04

TABLE 3 LC-33 METEOROLOGICAL TOWER ANEMOMETER MEASURED WINDS (202 FT TOWER)

LEVEL #1, 12 FEET X484,982.64, Y185,057.73, H3983.00 (base)			LEVEL #2, 62 FEET X484,982.64, Y185,057.73, H3983.00 (base)		
T-TIME SEC	DIR DEG	SPEED KTS	T-TIME SEC	DIR DEG	SPEED KTS
T-30	102	06	T-30	101	05
T-20	095	05	T-20	096	05
T-10	086	05	T-10	107	05
T0.0	103	05	T0.0	102	03
T+10	093	06	T+10	104	05

LEVEL #3, 102 FEET X484,982.64, Y185,057.73, H3983.00 (base)			LEVEL #4, 202 FEET X484,982, Y185,057.73, H3983.00 (base)		
T-TIME SEC	DIR DEG	SPEED KTS	T-TIME SEC	DIR DEG	SPEED KTS
T-30	095	05	T-30	108	04
T-20	095	06	T-20	106	03
T-10	091	05	T-10	106	03
T0.0	092	05	T0.0	095	04
T+10	093	05	T+10	087	04

TABLE 4

T-TIME PILOT-BALLOON MEASURED WIND DATA

DATE 20 July 1981

SITE: LC-33
TIME: 0939 MDT
WSTM COORDINATES:
X= 485,135.76
Y= 185,919.24
H= 3,988.57

LAYER MIDPOINT METERS AGL	DIRECTION DEGREES	SPEED KNOTS
SURFACE	083	02
150	085	03
210	085	03
270	086	03
330	062	03
390	061	04
500	028	05
650	032	05
800	322	01
950	058	01
1150	109	04
1350	119	05
1550	120	02
1750	053	02
2000	029	02

SITE: NICK
TIME: 0936 MDT
WSTM COORDINATES:
X= 470,734.56
Y= 255,775.64
H= 4,126.57

LAYER MIDPOINT METERS AGL	DIRECTION DEGREES	SPEED KNOTS
SURFACE	C A L M	
150	006	04
210	006	05
270	006	05
330	006	04
390	008	04
500	014	04
650	359	04
800	343	03
950	092	02
1150	129	05
1350	141	05
1550	142	04
1750	169	02
2000	M I S G	

Data obtained from RAPTS T-9 radar tracked pilot-balloon observation.

TABLE 5

AIMING AND T-TIME COMPUTER MET MESSAGES
20 July 1981

WSD 0630 MDT
METCM1324064
201250122881

00391004	29530881
01407004	30130871
02343003	30340846
03425004	30060809
04418004	29690764
05344002	29210721
06131002	28770680
07068011	28380641
08056018	27960603
09083018	27470567
10093016	26990533
11078012	26550500
12132010	26140454

LC-37 0730 MDT
METCM1324063
201350124879

00249004	29820879
01232005	30020869
02206005	30180845
03293003	29970807
04564002	29650762
05624001	29200719
06633004	28770678
07073012	28350639
08081015	27900601
09093012	27430566
10087012	27010531
11113011	26610499
12104008	26140452

WSD 0830 MDT
METCM1324064
201450122882

00249003	30170882
01250005	30120872
02250007	30050848
03271004	29980810
04260002	29680765
05006001	29250722
06019003	28840681
07066012	28390641
08093017	27940604
09107016	27500568
10138016	27060533
11166011	26720501
12126010	26380455

LC-37 0930 MDT
METCM1324063
201550124880

00000000	30410880
01180002	30320870
02150002	30080846
03272001	29910808
04199003	29570763
05056002	29140720
06105003	28710679
07065009	28260640
08087016	27830602
09106015	27420566
10151012	27010532
11191009	26680499
12106007	26300453

WSD 1030 MDT
METCM1324064
201650122883

00622006	30560883
01626001	30470873
02024005	30250848
03191002	30000811
04133003	29650766
05100003	29190723
06065004	28760681
07094011	28350642
08108014	27910604
09143015	27470568
10167009	27070534
11146006	26790501
12090009	26360455

STATION ALTITUDE 3989.00 FEET MSL
20 JULY 21 0 6[illegible] HRS MDT
ASCENSION NO. 463

SIGNIFICANT LEVEL DATA
20100720463
WHITE SANDS

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

TABLE 6

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL.HUM. PERCENT
680.6	3989.0	20.2	12.2	60.0
674.6	4184.9	25.3	14.7	52.0
665.0	4505.9	28.6	15.6	46.0
850.0	5017.3	28.4	13.9	41.0
761.8	8182.0	22.0	8.9	43.0
700.0	10568.8	15.0	4.7	50.0
627.8	13564.2	8.1	-.6	54.0
500.0	19562.5	-8.7	-8.8	99.0
492.1	19968.7	-9.3	-9.8	96.0
478.8	20666.1	-9.5	-17.3	53.0
434.0	23140.4	-14.5	-23.3	47.0
419.4	23993.3	-14.9	-25.4	40.0
400.0	25167.6	-17.2	-25.1	50.0

UPPER AIR DATA

STATION ALTITUDE 3989.00 FEET MSL
20 JULY 81 0630 HRS MDT
ASCENSION NO. 463

2010020463
WHITE SANDS

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

TABLE 7

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
3989.0	880.6	20.2	12.2	60.0	1034.4	669.3	270.0	4.1	1.000294
4000.0	880.3	20.5	12.3	59.6	1037.9	669.6	220.0	4.1	1.000294
4500.0	865.2	20.5	10.8	46.1	991.2	674.3	217.7	3.8	1.000296
5000.0	850.5	20.4	13.9	41.2	975.6	676.9	215.1	3.6	1.000284
5500.0	835.9	20.4	13.1	41.3	962.2	677.7	212.2	3.4	1.000278
6000.0	821.6	20.4	12.3	41.6	949.1	678.5	223.3	3.5	1.000272
6500.0	807.5	20.4	11.5	41.9	936.2	679.3	239.2	4.2	1.000267
7000.0	793.6	20.4	10.7	42.3	923.5	674.1	243.7	4.6	1.000261
7500.0	780.0	20.4	9.9	42.6	910.9	672.9	244.6	4.8	1.000256
8000.0	766.6	20.4	9.1	42.9	898.5	671.6	240.4	4.2	1.000251
8500.0	753.3	21.1	8.3	43.9	887.0	670.1	230.5	3.3	1.000246
9000.0	740.0	19.6	7.5	45.4	875.9	668.3	218.3	2.6	1.000241
9500.0	727.0	18.1	6.6	46.9	865.1	666.6	200.6	2.1	1.000236
10000.0	714.3	16.7	5.7	48.3	854.4	664.8	176.5	1.8	1.000232
10500.0	701.7	15.2	4.8	49.8	843.8	663.1	149.3	1.9	1.000227
11000.0	689.1	14.0	3.9	50.6	832.3	661.6	106.0	1.3	1.000223
11500.0	676.7	12.9	3.0	51.2	820.8	660.2	57.3	2.0	1.000218
12000.0	664.5	11.7	2.2	51.9	809.4	658.9	40.9	4.6	1.000214
12500.0	652.6	10.6	1.3	52.6	798.2	657.5	39.5	7.3	1.000209
13000.0	640.8	9.4	.4	53.2	787.1	656.1	42.5	10.1	1.000205
13500.0	629.3	8.2	-.5	53.9	776.3	654.7	38.0	12.9	1.000201
14000.0	617.5	6.9	-1.0	57.3	765.5	653.1	33.7	15.7	1.000198
14500.0	605.9	5.5	-1.4	61.0	754.9	651.4	31.5	17.4	1.000195
15000.0	594.5	4.1	-1.9	64.8	744.5	649.8	31.0	18.5	1.000192
15500.0	583.3	2.7	-2.5	68.5	734.3	648.1	31.2	17.9	1.000189
16000.0	572.4	1.3	-3.1	72.3	724.3	646.4	43.0	17.6	1.000186
16500.0	561.6	-.1	-3.8	76.0	714.4	644.7	49.8	17.7	1.000183
17000.0	551.1	-1.5	-4.5	79.8	704.6	643.0	52.2	17.2	1.000179
17500.0	540.7	-2.9	-5.3	83.5	695.0	641.3	53.7	16.4	1.000176
18000.0	530.5	-4.3	-6.1	87.3	685.6	639.6	52.6	15.6	1.000173
18500.0	520.6	-5.7	-6.9	91.0	676.3	637.9	51.7	14.7	1.000170
19000.0	510.8	-7.1	-7.8	94.8	667.2	636.2	55.4	14.1	1.000167
19500.0	501.2	-8.5	-8.7	98.5	658.2	634.5	59.3	13.4	1.000164
20000.0	491.5	-9.3	-10.1	94.1	647.5	633.5	63.3	12.2	1.000160
20500.0	481.9	-9.5	-15.1	63.2	635.7	633.1	66.9	11.0	1.000152
21000.0	472.5	-10.2	-13.1	52.2	625.2	632.1	68.2	9.7	1.000147
21500.0	463.2	-11.2	-13.3	51.0	615.3	630.9	68.1	9.0	1.000144
22000.0	454.1	-12.2	-20.5	49.8	605.6	629.6	67.1	9.3	1.000142
22500.0	445.2	-13.2	-21.7	48.6	596.1	628.4	62.9	9.6	1.000139
23000.0	436.4	-14.2	-22.9	47.3	586.7	627.1	58.1	10.0	1.000136

STATION ALTITUDE 3989.00 FEET MSL
29 JULY 81 0630 HRS MDT
ASCENSION NO. 463

UPPER AIR DATA
2010029463
WHITE SANDS

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

TABLE 7 CON'T

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL.HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
23500.0	427.8	-14.7	-24.2	44.0	574.1	626.6	43.6	9.7	1.000133
24000.0	419.3	-14.9	-25.4	40.1	565.2	626.3	50.6	9.8	1.000130
24500.0	410.9	-15.9	-25.2	44.3	556.0	625.1			1.000128
25000.0	402.7	-16.9	-25.1	48.6	547.0	623.9			1.000126

STATION ALTITUDE 3989.00 FEET MSL
20 JULY 81 0630 HRS MDT
ASCENSION NO. 463

MANDATORY LEVELS
20100/26463
WHITE SANDS

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

TABLE 8

PRESSURE	GEOPOTENTIAL	TEMPERATURE		RELATIVE	WIND DATA	
		AIR	DEWPOINT		DIRECTION	SPEED
MILLIBARS	FEET	DEGREES CENTIGRADE		PERCENT	DEGREES(TN)	KNOTS
650.0	5014.	24.4	13.9	41.	215.1	3.6
700.0	6772.	24.9	11.1	42.	243.1	4.5
750.0	8619.	20.7	8.1	44.	227.2	3.1
700.0	10558.	15.0	4.7	50.	145.7	1.8
650.0	12602.	10.3	1.1	53.	40.3	7.9
600.0	14770.	4.8	-1.7	63.	30.6	18.2
550.0	17074.	-1.7	-4.6	80.	52.5	17.0
500.0	19535.	-8.7	-8.4	99.	59.7	13.3
450.0	22199.	-12.7	-21.1	49.	66.8	9.5
400.0	25125.	-17.2	-25.1	50.		

STATION ALTITUDE 4051.37 FEET MSL
20 JULY 81 0730 HRS MDT
ASCENSION NO. 161

SIGNIFICANT LEVEL DATA
20101A0161
LC-37

GEODETIC COORDINATES
32.40175 LAT DEG
106.31232 LON DEG

TABLE 9

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL.HUM. PERCENT
678.8	4051.4	23.2	13.7	55.0
661.6	4622.1	26.6	14.7	48.0
650.0	5016.0	27.1	13.8	44.0
771.4	7815.2	22.5	9.3	43.0
700.0	10559.6	15.4	4.8	49.0
629.0	13504.0	8.0	-.7	54.0
567.0	16282.9	.2	-5.2	67.0
515.8	18752.5	-6.0	-8.0	82.0
500.0	19552.6	-7.4	-11.4	73.0
466.2	21335.4	-11.0	-16.1	66.0
458.0	21783.7	-11.5	-22.4	40.0
419.2	24004.2	-14.5	-27.2	33.0
400.0	25167.6	-17.2	-28.0	46.0
389.8	25804.1	-18.1	-27.1	45.0
368.4	27184.3	-21.4	-24.8	74.0
327.4	30019.2	-26.8	-31.4	65.0
300.0	32075.7	-31.7	-36.7	61.0

UPPER AIR DATA

STATION ALTITUDE 4051.37 FEET MSL
20 JULY 81 0730 HRS MDT
ASCENSION NO. 161

20101A0161
LC-37

GEODETIC COORDINATES
32.40175 LAT DEG
106.31232 LON DEG

TABLE 10

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL.HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(IN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
4051.4	876.8	23.2	13.7	55.0	1026.1	672.9	140.0	4.1	1.000296
4500.0	865.3	25.9	14.5	49.5	1000.7	676.1	139.6	3.8	1.000293
5000.0	850.5	27.1	13.8	44.2	979.9	677.4	139.0	3.5	1.000285
5500.0	835.9	26.3	13.0	43.8	965.8	676.5	138.3	3.2	1.000279
6000.0	821.5	25.5	12.2	43.6	952.0	675.4	143.9	2.5	1.000273
6500.0	807.4	24.7	11.4	43.5	938.5	674.4	164.0	1.7	1.000267
7000.0	793.5	23.8	10.6	43.3	925.1	673.4	222.9	.9	1.000261
7500.0	779.9	23.0	9.8	43.1	911.9	672.4	240.4	1.8	1.000256
8000.0	766.4	22.0	9.0	43.4	899.3	671.2	301.3	2.2	1.000250
8500.0	752.9	20.7	8.2	44.5	887.6	669.7	305.5	1.1	1.000246
9000.0	739.7	19.4	7.4	45.6	876.1	668.1	59.5	.2	1.000241
9500.0	726.7	18.1	6.6	46.7	864.7	666.6	114.5	1.3	1.000236
10000.0	714.0	16.8	5.7	47.8	853.5	665.0	83.5	.8	1.000232
10500.0	701.5	15.6	4.9	48.9	842.5	663.5	3.8	1.1	1.000227
11000.0	688.9	14.3	4.0	49.7	831.2	662.0	20.6	2.9	1.000222
11500.0	676.5	13.0	3.0	50.6	820.0	660.5	25.9	5.0	1.000218
12000.0	664.3	11.8	2.1	51.4	808.9	658.9	27.3	7.2	1.000213
12500.0	652.4	10.5	1.2	52.3	798.0	657.4	27.9	9.4	1.000209
13000.0	640.6	9.3	.2	53.1	787.3	655.9	33.2	11.0	1.000205
13500.0	629.1	8.0	-.7	54.0	776.7	654.4	37.3	12.7	1.000201
14000.0	617.5	6.6	-1.5	56.3	766.3	652.7	42.3	14.2	1.000197
14500.0	606.0	5.2	-2.2	58.7	756.0	651.0	46.1	15.7	1.000194
15000.0	594.8	3.8	-3.0	61.0	745.9	649.3	47.7	14.9	1.000190
15500.0	583.8	2.4	-3.8	63.3	735.9	647.7	49.3	14.1	1.000187
16000.0	573.0	1.0	-4.7	65.7	726.1	646.0	50.2	12.7	1.000184
16500.0	562.3	-.3	-5.5	68.3	716.1	644.3	51.2	11.7	1.000180
17000.0	551.6	-1.6	-6.1	71.4	705.8	642.8	52.3	11.7	1.000177
17500.0	541.2	-2.9	-6.8	74.4	695.7	641.3	53.5	12.0	1.000174
18000.0	530.9	-4.1	-7.5	77.4	685.7	639.8	54.9	12.5	1.000171
18500.0	520.8	-5.4	-8.2	80.5	675.9	638.3	56.2	12.4	1.000168
19000.0	510.9	-6.4	-9.4	79.2	666.8	636.9	57.5	11.9	1.000164
19500.0	501.0	-7.3	-11.2	73.6	655.3	635.8	59.6	11.2	1.000160
20000.0	491.3	-8.3	-12.6	71.2	645.1	634.6	62.7	10.4	1.000156
20500.0	481.7	-9.3	-13.9	69.3	635.0	633.3	64.8	9.6	1.000153
21000.0	472.4	-10.3	-15.2	67.3	625.2	632.1	65.9	8.9	1.000150
21500.0	463.2	-11.2	-18.1	56.5	615.2	630.9	67.3	8.1	1.000145
22000.0	454.1	-11.8	-22.8	39.3	604.7	630.1	67.9	7.4	1.000140
22500.0	445.1	-12.5	-23.9	37.7	594.4	629.2	67.3	7.0	1.000137
23000.0	436.3	-13.1	-25.0	36.2	584.2	628.4	45.5	7.0	1.000135
23500.0	427.7	-13.8	-26.0	34.6	574.2	627.6	33.7	7.6	1.000132

STATION ALTITUDE 4051.37 FEET MSL
20 JULY 61 0730 HRS MDT
ASCENSION NO. 161

UPPER AIR DATA
20101:00161
LC-37

GEODETIC COORDINATES
32.40175 LAT DEG
106.31232 LON DEG

TABLE 10 CON'T

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL.HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
24000.0	419.3	-14.5	-27.2	33.0	564.4	626.7	26.7	7.6	1.000129
24500.0	410.9	-15.7	-26.5	38.5	555.6	625.3	21.9	6.9	1.000128
25000.0	402.7	-16.8	-26.1	44.1	546.9	623.9	16.4	5.8	1.000126
25500.0	394.6	-17.7	-26.6	45.5	537.8	622.9	8.6	4.7	1.000124
26000.0	386.7	-18.6	-26.6	49.1	528.8	621.8	7.9	3.5	1.000122
26500.0	378.9	-19.8	-25.6	59.6	520.5	620.4	17.6	2.3	1.000120
27000.0	371.2	-21.0	-24.9	70.1	512.3	618.9	24.2	1.7	1.000119
27500.0	363.6	-22.0	-25.5	73.0	503.9	617.6	21.9	1.5	1.000117
28000.0	356.1	-23.0	-26.7	71.4	495.5	616.4	351.7	1.5	1.000115
28500.0	348.8	-23.9	-27.8	69.8	487.1	615.3	321.2	2.5	1.000112
29000.0	341.6	-24.9	-29.0	68.2	479.0	614.1	311.1	4.0	1.000110
29500.0	334.6	-25.8	-30.1	66.6	470.9	612.9	308.0	5.7	1.000108
30000.0	327.7	-26.8	-31.3	65.1	463.0	611.7	308.0	7.0	1.000106
30500.0	320.8	-27.9	-32.6	64.1	455.5	610.2	309.6	7.7	1.000104
31000.0	314.0	-29.1	-33.9	63.1	448.1	608.7			1.000102
31500.0	307.4	-30.3	-35.2	62.1	440.9	607.2			1.000100
32000.0	301.0	-31.5	-36.5	61.1	433.8	605.7			1.000098

STATION ALTITUDE 4051.37 FEET MSL
20 JULY 81 0730 HRS MDT
ASCENSION NO. 161

MANDATORY LEVELS
20101N0161
LC-37

GEODETIC COORDINATES
32.40175 LAT DEG
106.31232 LON DEG

TABLE 11

PRESSURE MILLIBARS	GEOPOTENTIAL FEET	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL.HUM. PERCENT	WIND DATA DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS
850.0	5012.	27.1	13.8	44.	139.0	3.5
800.0	6765.	24.2	11.0	45.	185.2	1.3
750.0	8609.	20.4	8.0	45.	308.0	.9
700.0	10549.	15.4	4.8	49.	.5	1.2
650.0	12594.	10.3	1.0	52.	28.9	9.7
600.0	14760.	4.5	-2.0	60.	47.0	15.3
550.0	17061.	-1.8	-6.2	72.	52.5	11.7
500.0	19525.	-7.4	-11.4	73.	59.9	11.2
450.0	22193.	-12.1	-23.3	39.	63.5	7.2
400.0	25125.	-17.2	-26.0	46.	14.3	5.5
350.0	28370.	-23.7	-27.6	70.	324.8	2.3
300.0	32011.	-31.7	-36.7	61.		

STATION ALTITUDE 3989.00 FEET MSL
20 JULY 61 0830 HRS MDT
ASCENSION NO. 464

SIGNIFICANT LEVEL DATA
20100/20464
WHITE SANDS

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

TABLE 12

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE AIR DEGREES	TEMPERATURE DEWPOINT CENTIGRADE	REL.HUM. PERCENT
881.8	3989.0	26.8	12.1	40.0
850.0	5052.3	25.0	13.2	48.0
837.8	5470.4	25.9	13.4	46.0
799.4	6826.0	24.5	11.1	43.0
751.4	8599.3	20.9	8.5	45.0
700.0	10596.5	15.5	5.7	52.0
523.4	18424.8	-4.6	-7.4	81.0
500.0	19606.3	-6.6	-9.8	78.0
476.0	20867.6	-8.3	-16.8	50.0
460.4	21716.7	-9.6	-20.3	41.0
422.8	23868.6	-12.9	-24.8	36.0
400.0	25250.7	-16.4	-23.3	55.0

UPPER AIR DATA

STATION ALTITUDE 3989.00 FEET MSL
20 JULY 61 0830 HRS MDT
ASCENSION NO. 464

20100201464
WHITE SANDS

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

TABLE 13

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL.HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
3989.0	981.8	26.8	12.1	40.0	1017.9	676.8	140.0	2.9	1.000286
4000.0	881.5	26.8	12.1	40.1	1017.6	676.7	140.1	2.9	1.000286
4500.0	866.4	25.9	12.7	43.8	1002.7	675.9	143.1	3.2	1.000286
5000.0	851.5	25.1	13.2	47.6	988.0	675.1	145.6	3.5	1.000285
5500.0	836.9	25.9	13.3	45.9	968.3	676.0	147.7	3.9	1.000281
6000.0	822.6	25.4	12.5	44.8	953.6	675.3	149.3	4.0	1.000274
6500.0	808.5	24.8	11.7	43.7	939.1	674.7	150.7	4.0	1.000268
7000.0	794.6	24.1	10.9	43.2	925.3	673.8	148.6	3.8	1.000262
7500.0	780.8	23.1	10.1	43.8	912.5	672.6	143.0	3.4	1.000257
8000.0	767.3	22.1	9.4	44.3	900.0	671.4	141.3	2.3	1.000252
8500.0	754.0	21.1	8.7	44.9	887.6	670.2	144.6	.8	1.000247
9000.0	740.8	19.8	8.0	46.4	876.0	668.9	57.6	.2	1.000243
9500.0	727.8	18.5	7.3	48.2	864.8	667.8	8.5	.7	1.000238
10000.0	715.0	17.1	6.6	49.9	853.7	666.4	15.3	1.2	1.000234
10500.0	702.4	15.8	5.8	51.7	842.7	663.8	27.6	1.5	1.000230
11000.0	689.6	14.5	5.1	53.5	831.2	662.3	28.2	2.3	1.000226
11500.0	676.9	13.2	4.4	55.3	819.7	660.8	22.0	3.7	1.000221
12000.0	664.4	11.9	3.7	57.2	808.4	659.2	22.4	5.3	1.000217
12500.0	652.2	10.6	3.0	59.1	797.2	657.7	28.9	7.8	1.000213
13000.0	640.2	9.3	2.2	60.9	786.2	656.2	33.0	10.2	1.000209
13500.0	628.4	8.0	1.4	62.8	775.4	654.6	41.7	12.8	1.000205
14000.0	616.9	6.8	.6	64.6	764.7	653.1	47.1	15.2	1.000201
14500.0	605.5	5.5	-.3	66.5	754.3	651.5	49.8	16.5	1.000197
15000.0	594.4	4.2	-1.1	68.3	743.9	650.0	51.8	17.3	1.000194
15500.0	583.5	2.9	-2.0	70.2	733.8	648.4	53.1	17.3	1.000190
16000.0	572.7	1.6	-2.9	72.0	723.7	646.8	55.9	16.8	1.000186
16500.0	562.2	.3	-3.8	73.9	713.9	645.3	60.4	15.8	1.000182
17000.0	551.8	-.9	-4.7	75.7	704.1	643.7	66.0	15.5	1.000179
17500.0	541.7	-2.2	-5.6	77.6	694.6	642.1	71.9	15.4	1.000176
18000.0	531.7	-3.5	-6.5	79.4	685.1	640.6	78.0	14.9	1.000172
18500.0	521.9	-4.7	-7.5	80.8	675.6	639.1	84.2	14.0	1.000169
19000.0	511.9	-5.6	-8.5	79.5	664.8	637.6	91.5	12.1	1.000165
19500.0	502.1	-6.4	-9.6	78.3	654.3	636.0	92.5	10.7	1.000162
20000.0	492.4	-7.1	-11.8	69.3	643.6	634.4	89.5	9.6	1.000157
20500.0	482.9	-7.8	-14.6	58.2	633.0	632.1	83.0	8.9	1.000152
21000.0	473.5	-8.5	-17.4	48.6	622.6	630.2	77.1	8.3	1.000147
21500.0	464.3	-9.3	-19.4	43.3	612.3	628.2	74.7	7.6	1.000144
22000.0	455.3	-10.0	-20.9	40.3	602.2	626.2	68.6	7.9	1.000140
22500.0	446.3	-10.8	-22.0	39.2	592.2	624.3	61.0	8.4	1.000138
23000.0	437.6	-11.6	-23.0	38.0	582.3	622.3	47.5	7.7	1.000135

STATION ALTITUDE 3989.00 FEET MSL
20 JULY 81 0830 HRS MDT
ASCENSION NO. 464

UPPER AIR DATA
20100201464
WHITE SANDS

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

TABLE 13 CON'T

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES	TEMPERATURE DEWPOINT CENTIGRADE	REL.HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	INC DATA DIRECTION DEGREES(TN)	INC DATA SPEED KNOTS	INDEX OF REFRACTION
3989.0	881.8	26.8	12.1	40.0	1017.9	676.8	140.0	2.9	1.000286
4000.0	881.5	26.8	12.1	40.1	1017.6	676.7	140.1	2.9	1.000286
4500.0	866.4	25.9	12.7	43.8	1002.7	675.9	143.1	3.2	1.000286
5000.0	851.5	25.1	13.2	47.6	988.0	675.1	145.6	3.5	1.000285
5500.0	836.9	25.9	13.3	45.9	968.3	676.0	147.7	3.9	1.000281
6000.0	822.6	25.4	12.5	44.8	953.6	675.3	149.3	4.0	1.000274
6500.0	808.5	24.8	11.7	43.7	939.1	674.7	150.7	4.0	1.000268
7000.0	794.6	24.1	10.9	43.2	925.3	673.8	148.6	3.8	1.000262
7500.0	780.8	23.1	10.1	43.8	912.5	672.6	143.0	3.4	1.000257
8000.0	767.3	22.1	9.4	44.3	900.0	671.4	141.3	2.3	1.000252
8500.0	754.0	21.1	8.7	44.9	887.6	670.2	144.6	.8	1.000247
9000.0	740.8	19.8	8.0	46.4	876.0	668.6	37.8	.2	1.000243
9500.0	727.8	18.5	7.3	48.2	864.8	667.0	8.5	.7	1.000238
10000.0	715.0	17.1	6.6	49.9	853.7	665.4	15.3	1.2	1.000234
10500.0	702.4	15.8	5.8	51.7	842.7	663.8	27.6	1.5	1.000230
11000.0	689.6	14.5	5.1	53.5	831.2	662.3	28.2	2.3	1.000226
11500.0	676.9	13.2	4.4	55.3	819.7	660.8	22.0	3.7	1.000221
12000.0	664.4	11.9	3.7	57.2	808.4	659.2	22.4	5.3	1.000217
12500.0	652.2	10.6	3.0	59.1	797.2	657.7	28.9	7.8	1.000213
13000.0	640.2	9.3	2.2	60.9	786.2	656.2	33.0	10.2	1.000209
13500.0	628.4	8.0	1.4	62.8	775.4	654.6	41.7	12.8	1.000205
14000.0	616.9	6.8	.6	64.6	764.7	653.1	47.1	15.2	1.000201
14500.0	605.5	5.5	-.3	66.5	754.3	651.5	49.6	16.5	1.000197
15000.0	594.4	4.2	-1.1	68.3	743.9	650.0	51.8	17.3	1.000194
15500.0	583.5	2.9	-2.0	70.2	733.8	648.4	53.1	17.3	1.000190
16000.0	572.7	1.6	-2.9	72.0	723.7	646.8	55.9	16.8	1.000186
16500.0	562.2	.3	-3.8	73.9	713.9	645.3	60.4	15.8	1.000182
17000.0	551.8	-.9	-4.7	75.7	704.1	643.7	66.0	15.5	1.000179
17500.0	541.7	-2.2	-5.6	77.6	694.6	642.1	71.9	15.4	1.000176
18000.0	531.7	-3.5	-6.5	79.4	685.1	640.6	78.0	14.9	1.000172
18500.0	521.9	-4.7	-7.5	80.8	675.6	639.1	84.2	14.0	1.000169
19000.0	511.9	-5.6	-8.5	79.5	664.8	637.6	91.5	12.1	1.000165
19500.0	502.1	-6.4	-9.6	78.3	654.3	636.0	92.3	10.7	1.000162
20000.0	492.4	-7.1	-11.8	69.3	643.6	634.4	89.5	9.6	1.000157
20500.0	482.9	-7.8	-14.6	58.2	633.8	632.9	83.0	8.9	1.000152
21000.0	473.5	-8.5	-17.4	48.6	622.6	631.2	77.1	8.3	1.000147
21500.0	464.3	-9.3	-19.4	43.3	612.3	629.6	74.7	7.6	1.000144
22000.0	455.3	-10.0	-20.9	40.3	602.2	628.0	68.6	7.9	1.000140
22500.0	446.3	-10.8	-22.0	39.2	592.2	626.3	61.0	8.4	1.000138
23000.0	437.6	-11.6	-23.0	38.0	582.3	624.7	47.5	7.7	1.000135

STATION ALTITUDE 3989.00 FEET MSL
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UPPER AIR DATA
20100>0464
WHITE SANDS

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

TABLE 13 CON'T

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL.HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
23500.0	429.0	-12.3	-24.0	36.9	572.6	629.4	50.0	6.6	1.000132
24000.0	420.6	-13.2	-24.5	37.8	563.3	628.3			1.000130
24500.0	412.2	-14.5	-23.8	44.7	554.8	626.8			1.000129
25000.0	404.0	-15.8	-23.4	51.6	546.4	625.3			1.000127

STATION ALTITUDE 3989.00 FEET MSL
20 JULY 81 0830 HRS MDT
ASCENSION NO. 464

MANDATORY LEVELS
20100 20464
WHITE SANDS

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

TABLE 14

PRESSURE	GEOPOTENTIAL	TEMPERATURE		REL. HUM.	WIND DATA	
		AIR	DEW POINT		DIRECTION	SPEED
MILLIBARS	FEET	DEGREES CENTIGRADE		PERCENT	DEGREES (TN)	KNOTS
850.0	5049.	25.0	13.2	48.	145.8	3.6
806.0	6799.	24.5	11.1	43.	150.6	3.9
750.0	8644.	20.8	8.5	45.	150.1	.4
700.0	10586.	15.5	5.7	52.	29.2	1.6
650.0	12633.	10.4	2.6	59.	30.1	8.5
600.0	14801.	4.8	-.7	67.	51.3	17.3
550.0	17108.	-1.2	-4.6	76.	67.4	15.4
500.0	19578.	-6.6	-9.8	78.	91.8	10.5
450.0	22262.	-10.5	-21.5	40.	64.6	8.3
400.0	25208.	-16.4	-23.5	55.		

STATION ALTITUDE 4051.37 FEET MSL
20 JULY 81 0930 GRS MDT
ASCENSION NO. 162

SIGNIFICANT LEVEL DATA
20101A00162
LC-37

GEODETIC COORDINATES
32.40175 LAT DEG
106.31232 LON DEG

TABLE 15

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL.HUM. PERCENT
880.2	4051.4	29.4	11.0	32.0
850.0	5067.3	25.9	10.9	39.0
817.4	6196.8	24.9	9.2	37.0
759.8	8288.9	20.9	8.4	39.0
700.0	10595.4	14.9	3.7	47.0
606.4	14518.2	4.5	-3.0	58.0
572.0	16074.0	.8	-2.9	76.0
547.0	17249.9	-2.1	-9.2	58.0
530.6	18043.5	-3.9	-9.9	63.0
522.6	18437.6	-5.0	-8.4	77.0
506.4	19251.4	-5.7	-14.7	49.0
500.0	19578.9	-6.7	-14.0	56.0
490.8	20055.3	-7.9	-14.5	59.0
483.0	20465.1	-7.9	-19.4	39.0
459.6	21727.3	-11.2	-25.3	30.0
436.8	23012.0	-11.4	-22.0	41.0
400.0	25210.5	-16.9	-25.7	46.0
379.2	26523.5	-19.6	-24.5	65.0
358.4	27895.8	-22.4	-26.4	58.0
337.0	29374.6	-25.9	-29.6	71.0
300.0	32117.3	-31.5	-37.3	56.0

UPPER AIR DATA

STATION ALTITUDE 4051.37 FEET MSL
20 JULY 61 0930 HRS MDT
ASCENSION NO. 162

2010180162
LC-37

GEODETIC COORDINATES
32.40175 LAT DEG
106.31232 LON DEG

TABLE 16

GEOMETRIC ALTITUDE NSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL.HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
4051.4	880.2	29.4	11.0	32.0	1007.8	679.6	.0	.0	1.000279
4500.0	860.7	27.9	11.0	35.1	997.3	677.8	129.0	.3	1.000277
5000.0	852.0	26.1	10.9	38.5	985.9	675.9	129.0	.7	1.000275
5500.0	837.4	25.5	10.3	38.2	971.2	675.2	129.0	1.1	1.000270
6000.0	823.0	25.1	9.5	37.3	956.1	674.6	129.0	1.5	1.000264
6500.0	808.8	24.3	8.8	37.3	942.1	673.7	130.8	2.0	1.000259
7000.0	794.8	23.4	8.2	37.8	928.9	672.6	132.3	2.4	1.000254
7500.0	781.0	22.4	7.5	38.2	915.9	671.4	124.9	2.6	1.000249
8000.0	767.5	21.5	6.8	38.7	903.1	670.3	114.1	2.6	1.000245
8500.0	754.1	20.4	6.2	39.7	890.8	669.0	96.5	2.3	1.000240
9000.0	740.8	19.1	5.7	41.5	879.1	667.5	70.8	2.2	1.000237
9500.0	727.8	17.7	5.1	43.2	867.6	666.0	63.3	2.5	1.000233
10000.0	715.0	16.4	4.5	44.9	856.2	664.4	59.6	2.8	1.000229
10500.0	702.4	15.1	3.8	46.7	845.0	662.9	54.6	3.0	1.000225
11000.0	689.7	13.8	3.1	48.1	833.8	661.3	48.1	3.2	1.000221
11500.0	677.2	12.5	2.2	49.5	822.6	659.8	36.1	3.4	1.000217
12000.0	664.9	11.2	1.4	50.9	811.6	658.2	31.8	4.5	1.000213
12500.0	652.9	9.9	.6	52.3	800.7	656.6	35.3	6.7	1.000209
13000.0	641.0	8.5	-.3	53.7	790.0	655.0	39.1	9.1	1.000205
13500.0	629.4	7.2	-1.2	55.1	779.5	653.4	43.4	11.7	1.000201
14000.0	618.0	5.9	-2.1	56.5	769.1	651.8	46.1	13.7	1.000197
14500.0	606.8	4.5	-3.0	57.9	758.9	650.2	48.2	14.7	1.000193
15000.0	595.5	3.4	-2.9	63.6	747.9	648.8	50.9	15.4	1.000191
15500.0	584.5	2.2	-2.8	69.4	737.2	647.5	54.7	15.6	1.000189
16000.0	573.6	1.0	-2.9	75.1	726.6	646.1	59.0	15.5	1.000187
16500.0	562.8	-.3	-5.1	69.5	716.4	644.5	64.2	15.1	1.000181
17000.0	552.2	-1.5	-7.8	61.8	706.5	642.9	69.7	14.4	1.000175
17500.0	541.8	-2.7	-9.4	59.6	696.3	641.4	75.8	13.7	1.000171
18000.0	531.5	-3.8	-9.8	62.7	686.0	640.0	84.7	12.4	1.000168
18500.0	521.3	-5.1	-8.8	74.9	675.9	638.6	96.1	11.2	1.000167
19000.0	511.3	-5.5	-12.5	57.6	666.4	637.9	101.4	10.2	1.000160
19500.0	501.5	-6.5	-14.1	54.3	656.1	636.7	106.7	9.2	1.000157
20000.0	491.9	-7.8	-14.4	58.7	646.7	635.1	100.0	8.7	1.000154
20500.0	482.3	-8.0	-19.5	38.8	635.1	634.7	93.3	8.4	1.000148
21000.0	472.9	-9.3	-21.8	35.2	625.9	633.1	88.7	8.2	1.000145
21500.0	463.7	-10.6	-24.2	31.6	616.9	631.5	80.8	7.8	1.000142
22000.0	454.7	-11.2	-24.5	32.3	606.3	630.7	81.1	7.3	1.000139
22500.0	445.7	-11.3	-23.2	36.6	592.6	630.6	82.4	7.6	1.000137
23000.0	437.0	-11.4	-22.0	40.9	581.1	630.6	29.6	8.5	1.000135
23500.0	428.4	-12.6	-22.8	42.1	572.3	629.1	19.6	9.3	1.000133

STATION ALTITUDE 4051.37 FEET MSL
20 JULY 81 0930 HRS MDT
ASCENSION NO. 162

UPPER AIR DATA
2N101A00162
LC-37

GEODETIC COORDINATES
32.40175 LAT DEG
106.31232 LON DEG

TABLE 16 CON'T

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL.HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
24000.0	419.9	-13.9	-23.6	43.2	564.7	627.6	10.9	9.7	1.000131
24500.0	411.5	-15.1	-24.5	44.4	555.2	626.0	2.8	10.0	1.000128
25000.0	403.4	-16.4	-25.4	45.5	546.9	624.5	355.0	10.3	1.000126
25500.0	395.3	-17.5	-25.3	50.2	538.3	623.1	350.5	9.4	1.000124
26000.0	387.4	-18.5	-24.8	57.4	529.5	621.9	346.9	7.7	1.000123
26500.0	379.6	-19.6	-24.5	64.7	521.0	620.7	345.2	6.3	1.000121
27000.0	371.8	-20.6	-25.8	62.6	512.5	619.4	344.9	5.0	1.000119
27500.0	364.3	-21.6	-27.2	60.0	504.1	618.1	345.4	4.0	1.000116
28000.0	356.8	-22.6	-28.4	58.9	495.9	616.8	346.6	3.2	1.000114
28500.0	349.5	-23.8	-28.8	63.3	488.0	615.3	342.5	2.5	1.000112
29000.0	342.3	-25.0	-29.2	67.7	480.3	613.9	334.2	1.9	1.000110
29500.0	335.2	-26.2	-29.9	70.3	472.5	612.4	327.2	2.7	1.000108
30000.0	328.2	-27.2	-31.3	67.6	464.6	611.2	322.6	3.5	1.000106
30500.0	321.3	-28.2	-32.7	64.8	456.7	609.9	317.8	4.9	1.000104
31000.0	314.6	-29.2	-34.1	62.1	449.0	608.6			1.000102
31500.0	308.0	-30.2	-35.6	59.4	441.5	607.3			1.000100
32000.0	301.5	-31.3	-37.0	56.6	434.1	606.0			1.000098

STATION ALTITUDE 4051.37 FEET MSL
20 JULY 81 0930 HRS MDT
ASCENSION NO. 162

MANDATORY LEVELS
20101 162
LC-37

GEODETIC COORDINATES
32.40175 LAT DEG
106.31232 LON DEG

TABLE 17

PRESSURE	GEOPOTENTIAL	TEMPERATURE		REL.HUM.	WIND DATA	
MILLIBARS	FEET	AIR DEGREES CENTIGRADE	DEWPOINT CENTIGRADE	PERCENT	DIRECTION DEGREES(TN)	SPEED KNOTS
850.0	5064.	25.9	10.9	39.	129.0	.8
800.0	6810.	23.7	8.4	38.	131.8	2.3
750.0	8650.	19.9	6.1	40.	89.1	2.2
700.0	10585.	14.9	3.7	47.	53.7	3.0
650.0	12625.	9.5	.4	53.	35.8	7.3
600.0	14785.	3.8	-2.9	61.	49.3	15.4
550.0	17084.	-1.7	-8.4	60.	70.8	14.3
500.0	19551.	-6.7	-14.0	56.	105.8	9.1
450.0	22226.	-11.3	-23.8	35.	50.8	7.3
400.0	25168.	-16.9	-25.7	46.	352.1	10.3
350.0	28415.	-23.7	-28.8	63.	343.0	2.6
300.0	32052.	-31.5	-37.3	56.		

STATION ALTITUDE 3989.00 FEET MSL
20 JULY 61 1030 HRS MDT
ASCENSION NO. 465

SIGNIFICANT LEVEL DATA
20100Z0465
WHITE SANDS

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

TABLE 18

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE AIR DEGREES	TEMPERATURE DEWPOINT CENTIGRADE	REL.HUM. PERCENT
882.5	3989.0	30.8	11.7	31.0
850.0	5087.2	27.6	13.2	41.0
833.2	5667.0	26.0	11.7	41.0
795.6	7001.0	24.7	9.4	38.0
700.0	10628.3	14.9	4.6	50.0
641.2	13046.5	9.1	.3	54.0
579.6	15766.2	2.0	-2.5	72.0
537.8	17737.3	-2.9	-9.1	62.0
527.1	18260.6	-4.0	-7.1	79.0
521.4	18543.0	-4.0	-11.5	56.0
500.0	19627.6	-5.9	-13.7	54.0
481.4	20603.2	-6.8	-20.0	34.0
458.4	21853.9	-9.6	-23.5	31.0
420.8	24011.9	-13.8	-21.1	54.0
413.6	24443.3	-14.2	-27.6	31.0
400.0	25274.5	-16.5	-25.6	45.0

UPPER AIR DATA
20100/0465
WHITE SANDS

STATION ALTITUDE 3989.0 FEET MSL
20 JULY 61 1030 GRS MDT
ASCENSION NO. 465

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

TABLE 19

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL.HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
3989.0	832.5	30.8	11.7	31.0	1005.5	681.2	350.0	6.0	1.000281
4000.0	832.2	30.8	11.7	31.1	1005.2	681.2	350.1	6.0	1.000281
4500.0	867.2	29.3	12.5	35.7	992.5	679.7	350.0	4.8	1.000282
5000.0	852.5	27.9	13.1	40.2	980.1	678.2	10.4	3.8	1.000282
5500.0	838.0	26.5	12.1	41.0	968.1	676.5	29.4	3.1	1.000276
6000.0	823.6	25.7	11.2	40.3	954.3	675.5	44.6	2.6	1.000269
6500.0	809.5	25.2	10.3	39.1	939.7	674.9	72.4	2.2	1.000263
7000.0	795.6	24.7	9.4	38.0	925.3	674.2	110.6	2.4	1.000257
7500.0	781.7	23.4	8.9	39.7	913.4	672.7	47.3	2.4	1.000253
8000.0	768.0	22.0	8.3	41.3	901.6	671.1	80.6	2.5	1.000249
8500.0	754.6	20.7	7.6	43.0	890.1	669.5	63.2	2.6	1.000244
9000.0	741.4	19.3	7.0	44.6	878.7	667.9	57.4	2.8	1.000240
9500.0	728.4	17.9	6.3	46.3	867.4	666.3	55.4	3.0	1.000236
10000.0	715.7	16.6	5.5	47.9	856.4	664.7	56.6	3.1	1.000232
10500.0	703.2	15.2	4.8	49.6	845.5	663.1	52.7	3.2	1.000228
11000.0	690.6	14.0	3.9	50.6	834.1	661.6	41.7	3.6	1.000223
11500.0	678.2	12.8	3.1	51.4	822.7	660.2	40.2	5.3	1.000219
12000.0	666.0	11.6	2.2	52.3	811.5	658.7	42.1	7.4	1.000214
12500.0	654.0	10.4	1.3	53.1	800.4	657.3	49.1	9.5	1.000210
13000.0	642.3	9.2	.4	53.9	789.5	655.8	53.3	11.2	1.000206
13500.0	630.5	7.9	-.1	57.0	778.6	654.3	56.2	12.4	1.000203
14000.0	618.9	6.6	-.5	60.3	767.9	652.8	57.9	13.0	1.000200
14500.0	607.5	5.3	-1.0	63.6	757.3	651.2	59.9	13.6	1.000196
15000.0	596.3	4.0	-1.6	66.9	747.0	649.7	64.2	14.3	1.000193
15500.0	585.4	2.7	-2.2	70.2	736.8	648.1	69.6	14.8	1.000190
16000.0	574.5	1.4	-3.3	70.8	726.6	646.6	76.5	15.3	1.000186
16500.0	563.7	.2	-5.0	68.3	716.4	645.0	81.9	14.5	1.000181
17000.0	553.1	-1.1	-6.6	65.7	706.3	643.4	86.9	13.3	1.000176
17500.0	542.7	-2.3	-8.3	63.2	696.4	641.9	90.2	11.3	1.000172
18000.0	532.4	-3.5	-8.0	70.5	686.1	640.5	94.6	9.3	1.000170
18500.0	522.3	-4.0	-10.7	59.5	674.7	639.8	102.0	7.2	1.000164
19000.0	512.3	-4.8	-12.4	55.2	663.9	638.7	94.8	6.0	1.000160
19500.0	502.5	-5.7	-13.4	54.2	653.4	637.7	81.3	5.3	1.000157
20000.0	492.8	-6.2	-15.8	46.4	642.3	636.9	69.0	6.1	1.000153
20500.0	483.3	-6.7	-19.2	36.1	631.3	636.2	61.0	6.9	1.000148
21000.0	474.0	-7.7	-21.1	33.0	621.4	635.8	56.9	7.1	1.000145
21500.0	464.8	-8.8	-22.5	31.8	612.0	635.7	52.7	7.8	1.000142
22000.0	455.8	-9.9	-23.2	32.6	602.6	632.4	49.1	9.0	1.000139
22500.0	446.8	-10.9	-22.4	37.9	592.9	631.2	48.1	10.1	1.000138
23000.0	438.0	-11.8	-21.3	43.2	583.4	630.1	48.0	11.3	1.000136

UPPER AIR DATA
20100204G5
WHITE SANDS

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

STATION ALTITUDE 3989.00 FEET MSL
20 JULY 61 1031 HRS MDT
ASCENSION NO. 465

TABLE 19 CON'T

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL.HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
23500.0	429.4	-12.8	-21.4	48.5	574.1	628.4	45.1	11.8	1.000134
24000.0	421.0	-13.8	-21.1	53.9	564.9	627.7			1.000132
24500.0	412.7	-14.4	-27.4	32.0	555.2	626.9			1.000127
25000.0	404.4	-15.7	-26.1	40.4	547.8	625.2			1.000126

MANDATORY LEVELS

STATION ALTITUDE 3989.00 FEET MSL
29 JULY 61 1030 HRS MDT
ASCENSION NO. 465

2010020465
WHITE SANDS

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

TABLE 20

PRESSURE	GEOPOTENTIAL	TEMPERATURE		REL. HUM.	WIND DATA	
		AIR	DEWPOINT	PERCENT	DIRECTION	SPEED
MILLIBARS	FEET	DEGREES CENTIGRADE			DEGREES(TN)	KNOTS
850.0	5033.	27.6	13.2	41.	13.1	3.6
800.0	6836.	24.9	9.7	38.	99.7	2.2
750.0	8681.	20.2	7.4	44.	58.7	2.6
700.0	10618.	14.9	4.6	50.	49.8	3.3
650.0	12660.	10.0	1.0	53.	50.8	10.2
600.0	14825.	4.4	-1.4	66.	62.9	14.1
550.0	17128.	-1.4	-7.1	65.	87.7	12.7
500.0	19599.	-5.9	-13.7	54.	78.0	5.5
450.0	22288.	-10.5	-22.7	36.	48.2	9.7
400.0	25231.	-16.5	-25.0	45.		

END

DATE
FILMED
10-81

DTIC